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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,512	10/24/2003	Lahoucine Ettaleb	10326-78US JA/Im	7391
20988	7590	08/24/2005	EXAMINER	
OGILVY RENAULT LLP 1981 MCGILL COLLEGE AVENUE SUITE 1600 MONTREAL, QC H3A2Y3 CANADA			MASINICK, MICHAEL D	
			ART UNIT	PAPER NUMBER
			2125	
DATE MAILED: 08/24/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,512

Applicant(s)

ETTALEB ET AL.

Examiner

Michael D. Masinick

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 9, 12-15 are is/are rejected.
- 7) ☒ Claim(s) 6, 7, 10, 11, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's response to non-final office action dated 7/22/2005 is found to be partially persuasive. Previous rejections made under USC 112 are removed. All art rejections are maintained as previously written.

The Nixon patent cited as prior art details a full control system of a manufacturing plant environment. One of the pieces of this environment is a system to detect abnormalities in the plant sensors and any other errors associated with the control system. This is done using the same methods set forth by applicant. Nixon sets forth many different ways to do this detection, and each of the claim elements of the current claims can be read upon by Nixon.

Applicant has requested clarifications of the examiners views on where in the art claim elements of claim 1 are found. Each claim element is addressed below with a specific citation and explanation.

Measuring an error in a control loop over time to determine a power spectral density of said error;

This is found in paragraph 57, specifically "...transforms of this data to provide power spectral density, frequency amplitude, etc...". Paragraph 57 mentions many types of data which are collected any analyzed for errors.

Determining a best fit analytical function describing said power spectral density;

Art Unit: 2125

Paragraph 58 of Nixon shows the process of analyzing the collected data. Paragraph 115 of Nixon specifically mentions the creation of a “best fit” analytical function (model) with which to compare the data.

Measuring a diagnostic value from a difference between said best fit analytical function and said power spectral density of said error.

This is shown in paragraph 116 with a comparison of the collected data with the model which was created in paragraph 115. Paragraph 61 shows a more broad view of the concept as well.

Further, applicant’s assertion that claims 3-5, 14 and 15 cannot be rejected under U.S.C. 103(a) in view of US Patent Application 2002/0077711 (Nixon et al.) because the claims from which they depend were not rejected with the same art are erroneous. Claims 1, 2, 8, 9, 12, and 13 were rejected under USC 102 because they show all elements of the claims, and no obviousness rejection was necessary.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2125

2. Claims 1, 2, 8, 9, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication 20020077711 to Nixon et al.
3. Referring to claim 1 and 12, Nixon shows a control loop diagnostic method (and computer program) comprising the steps of: measuring an error in a control loop over time to determine a power spectral density of said error (Paragraph 57); determining a best fit analytical function describing said power spectral density (Paragraph 58 and 115); and measuring a diagnostic value from a difference between said best fit analytical function and said power spectral density of said error (beginning of paragraph 61 and 116).
4. Referring to claim 2, Nixon shows wherein said analytical function describes a poorly-tuned control loop exhibiting resonance around a resonant frequency (paragraph 61).
5. Referring to claims 8 and 9, Nixon shows a step of determining from said difference whether corrective response is necessary (Figure 2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3-5, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication 20020077711 to Nixon et al in view of U.S. Patent No. 5,784,273 to Madhavan.

Art Unit: 2125

8. Referring to what has been shown above in regards to claims 3 and 14, Nixon, while showing many species of data manipulation and analysis, does not specifically show a second order approximation model defined by a natural frequency, a damping ratio and a variance.

9. This mathematical function for finding oscillations that fall outside of a given range is well known in the art. Madhavan shows a method for pinpointing whether “chatter” may occur in a manufacturing toolset. While this is a distinctly separate use of the mathematically concept from the current use of analyzing control loops, one of ordinary skill at the time the invention was made would have been motivated to use the mathematical functions of Madhavan using a second order approximation model defined by a natural frequency, a damping ratio and a variance to find potential errors in the control loops of Nixon because it can be used in real time which allows quick correctly of problems pinpointed by the function (abstract of Madhavan).

10. Referring to claim 4 and 15, Madhavan shows wherein said analytical function is determined to have substantially a same intensity value for a peak around said natural frequency as said power spectral density and substantially a same slope on at least one side of said peak as said power spectral density (Section H, theorem review).

11. Referring to claim 5, Madhavan shows wherein said analytical function is automatically determined from said power spectral density (“scale of fluctuation”).

Allowable Subject Matter

12. Claims 6, 7, 10, 11, 16, and 17 would be allowable over the prior art currently made of record if rewritten to fully overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and

Art Unit: 2125

any other non art-related objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Masinick whose telephone number is (571) 272-3746. The examiner can normally be reached on Mon-Fri, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MDM

3

ALBERT W. PALADINI
PRIMARY EXAMINER